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GROWTH OF LABOR PRODUCTIVITY IN USSR SOCIALIST AGRICULTUREPlanovoye Khozyaystvo, No 3
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A. Bolgov

The January Plenum of the CC of the CPSU placed before socialist agriculture the task of bringing the gross yield of grain up to 10 billion pud a year and increasing the production of animal products by twice or more in the next 5-6 years. At the All-Union Congress of Industrial Workers in May, 1955, N. S. Khrushchev pointed out that there is every reason to suppose that the task posed by the January Plenum of the Central Committee of the party will be executed not in 6 years as contemplated, but in 3-4 years.

The execution of this national task demands above all a continued growth of labor productivity in all kolkhozes, MTS, and sovkhozes, inasmuch as labor productivity is a decisive factor in the development of the whole national economy, including socialist agriculture.

The most important economic index of the growth of labor productivity in the kolkhozes, MTS, and sovkhozes is, first of all, the fullest and most efficient utilization of land, and the attainment of the largest amount of gross and commodity production per 100 hectares of agricultural land allotted to kolkhozes and sovkhozes.

N. S. Khrushchev, in a report to the January Plenum of the CC of the CPSU, pointed out that, in determining the potentialities of kolkhozes and sovkhozes to produce animal products, it is necessary to proceed, in the first place, from the quantity and quality of the consolidated land, bearing in mind that the growth of animal husbandry is directly dependent on the availability of land and its correct utilization.

In order to increase the interest of the kolkhozes in a fuller and more productive utilization of land, and to grant them the opportunity of showing economic initiative, the party and the government in 1940 introduced the "per hectare" principle of obligatory deliveries of products to the state. This principle, in guaranteeing the proper combination of state and kolkhoz interests, created an incentive for the kolkhoz workers to promote the all-round development of their collective economy. However, in recent years this "per hectare" principle of obligatory deliveries has been frequently violated by local organizations. The decisions of the September, February-March, and January plenums of the CC of the CPSU have put an end to these violations.

The new method of planning agricultural production, which is directed toward the maximum development of initiative in kolkhozes, MTS, and sovkhozes, has a great deal of importance for a fuller and more productive utilization of land.

In the decree of the CC of the CPSU and the Council of Ministers USSR of 9 March 1955, "Changes in Agricultural Planning Practices," it was pointed out that agricultural planning must begin jointly in the kolkhozes and the MTS, as well as sovkhozes, and must be conducted with consideration of the optimum utilization of agricultural land. In addition, the kolkhozes, in line with the tasks for the delivery to the state of agricultural and animal products, and

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the satisfaction of the needs of their own collective economy and that of kol-khoz workers for these products, must, with the participation of the MTS, determine the size of the area to be sown to crops and the head of livestock according to type and productivity.

In planning their production, kolkhozes must proceed on the basis of the necessity of maximum and intensive utilization of all arable land areas, the fundamental wealth of the kolkhozes, and of increasing the output of products per 100 hectares of agricultural land, depending on the actual soil, climatic, and economic conditions.

In freeing the initiative of kolkhoz and MTS workers through a fuller and more productive utilization of land, the new system of planning in agriculture enables each kolkhoz to determine such a manner of cultivation of the sown area as will guarantee the greatest increase of production of a particular crop in the shortest possible time.

At the same time, the new system of planning enables each kolkhoz and sovkhos to intensify specialization of their production, coupled with its all-round development, which is especially important to the growth of labor productivity in agriculture.

The basis of the whole agricultural economy is the production of grain. The February-March Plenum of the CC of the CPSU noted that the principal method of increasing grain production was and is an increase in crop yield. Another method of increasing grain production is the utilization of 23-30 million hectares of virgin and long-fallow land, which can provide a large supplementary quantity of grain with a significant reduction in labor and resources expenditure per unit of output.

The extension of maize planting to 20 million hectares, which is not only the most productive but the most valuable forage crop and simultaneously facilitates both the cultivation of grain crops and the raising of livestock, must play an especially large role in increasing both grain production and labor productivity in agriculture. At the same time, maize is the least labor-consuming crop per unit of output, i. e., it insures a large increase in labor productivity in grain production. Suffice it to say that in order to obtain an almost equivalent amount of fodder units from a hectare sown to maize only 20 percent of the man-days necessary for cultivating sugar beets is required, and less than half the number required for the cultivation of potatoes, even though a hectare of potatoes provides considerably fewer fodder units than maize.

Marx pointed out that, in contrast to other means of production which wear out from usage, land improves if properly cultivated. Therefore, a fuller, more productive utilization of land demands tireless attention to increase its fertility. The experience of progressive sovkhoses and kolkhozes which are achieving a systematic growth of agricultural crop yields demonstrates this graphically. For example, at the "Krasnyy Oktyabr'" Kolkhoz, Vozhgal'skiy Rayon, Kirovskaya Oblast, whose soil in the past was extremely poor, the average annual yield of rye in the period 1946-1950 amounted to 14.4 metric quintals per hectare, and in the period 1951-1953 to 22.8 metric quintals per hectare. In 1953, the barn yield of all spring crops at this kolkhoz reached 21.2 metric quintals per hectare. The Kolkhoz imeni Stalin, Vurnarskiy Rayon, Chuvash ASSR, harvested spring wheat, per hectare yearly average as follows: 1944-1946, 14 metric quintals; 1947-1949, 27.8 metric quintals; and 1950-1953, 35.3 metric quintals.

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Leading kolkhozes and sovkhoses attain such increases in crop yields on the basis of progressive methods of soil tillage and crop cultivation recommended by science which are directed toward the improvement of soil structure and increase of its fertility. Relevant to these methods are, first of all, deeper plowing, application of fertilizers, and utilization of proper crop rotation, which apply to the production conditions of the given kolkhoz or sovkhos. It is significant that the "Krasnyy Oktyabr" Kolkhoz [mentioned above] began deep plowing in 1927 when the first tractor was received, and at that time increased the depth of furrows from 12-17 centimeters to 24-25 centimeters, i. e., almost double. The kolkhoz annually applies to its fields almost 100,000 tons of manure and peat, all the manure being compounded with ground peat and phosphate fertilizer. In 1932, the kolkhoz had already introduced proper crop rotation applicable to the fertility conditions of the rayon.

In order to organize appropriate measures for increasing soil fertility, the Mytishchinskaya MTS, Mytishchinskiy Rayon, Moskovskaya Oblast, deepened the furrows in the kolkhozes which it services from 15-16 centimeters to 20-25 centimeters, arranged for the simultaneous application of mineral and organic fertilizers, and made a detailed agrochemical analysis in its agricultural chemical laboratory of the soil in all the kolkhozes; as a result, a cartogram was made for each kolkhoz and each brigade with instructions as to which areas and in what measure lime application was needed. On the basis of these cartograms, 2,700 tons of lime was applied on the kolkhoz fields in 1953.

A new system of cultivation, worked out by the crop expert T. S. Mal'tsev of the "Zavety Lenina" Kolkhoz, Shadrinskiy Rayon, Kurganskaya Oblast, has especially great significance in increasing soil productivity. As practice and scientific research have shown, this system leads to improvement of the moisture, agrochemical, and biological properties of the soil, and, in the last analysis, to an increase in productivity. As a result of the application of this system, the average annual yield of grain crops in the "Zavety Lenina" Kolkhoz increased from 8.1 metric quintals in the period 1942-1945 to 16.3 metric quintals in the period 1950-1953.

T. S. Mal'tsev's system is being called on to play a large role in the virgin and long-fallow land areas, since it not only preserves and increases soil fertility, but in the final analysis guarantees a real economy of labor and resources expenditure in soil cultivation.

In addition to the care given to increasing soil fertility, progressive kolkhozes are paying special attention to progressive methods of cultivating agricultural crops. In this connection, they are applying a whole series of agrotechnical measures suitable to the soil and climatic conditions and agrotechnical requirements of each crop.

However, in many kolkhozes and MTS, efforts to increase soil fertility are still being poorly conducted; soil cultivation is carried out unsatisfactorily, organic and mineral fertilizers are being used in insufficient quantities, and liming of the soil is rarely carried out. In addition, according to rough calculations, no less than 100 million tons of manure and dung washwater and other local fertilizers remain unutilized in kolkhozes annually; soil application of these fertilizers would provide an additional yield (in grain) of 50 million puds a year. In spite of the fact that the supply of peat in the country amounts to tens of millions of tons, in 1953 only 15,000 tons of peat was used on the fields by kolkhozes and sovkhoses. The liming of highly acid soils is not carried out in sufficient measure.

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The February-March Plenum of the CC of the CPSU, taking into consideration the advanced experience in agriculture, indicated the necessity of introducing into kolkhoz and sovkhos production the progressive methods of agrotechnology, and ordered the republic councils of ministers and the kray and oblast executive committees to work out and introduce minimum obligatory agrotechnical requirements for each crop. The January Plenum demanded that the central and local agricultural organs develop and carry out concrete measures for a decisive increase in agricultural crops, taking into account the peculiarities of each oblast, rayon, kolkhoz, and sovkhos, and pointing out that in the rayons subject to dry winds and droughts work must continue on planting and cultivating forest shelter belts. Fulfillment of these requirements should bring about an increase in the yield of agricultural crops in all kolkhozes and sovkhoses, and consequently lead to a continued growth of agricultural labor productivity.

Along with increasing soil fertility and agricultural crop yields, another very important condition for a fuller and more efficient utilization of land is the simultaneous development of all branches of agriculture.

The January Plenum of the CC of the CPSU also pointed out that the main path for the further development of animal husbandry lies in the development of collectivized animal husbandry in kolkhozes and sovkhoses since, as N. S. Khrushchev pointed out at the Plenum, collectivized animal husbandry is the basis on which the task of the complete satisfaction of the country's demands for animal products can be resolved. This is substantiated by the fact that in 1954 the relative share of animal products of kolkhozes, sovkhoses, and other state organizations in over-all procurements amounted to about 78 percent for meat, 77 percent for milk, 54 percent for eggs, and 92 percent for wool.

At the same time, the January Plenum of the CC of the CPSU noted that in developing collectivized animal husbandry, the significance of livestock privately owned by kolkhoz farmers, workers, and employees must not be belittled.

The January Plenum of the CC of the CPSU, in determining the concrete measures for the further development of collectivized animal husbandry, pointed out the necessity of intensifying the struggle against bare and epizootic livestock and also of creating in each sovkhos and kolkhoz a durable fodder base. The Plenum indicated that special attention should be paid to increasing livestock productivity, especially hog breeding, the most insufficiently developed branch of animal husbandry; bringing the relative share of hogs up to 40-50 percent of the over-all production of meat; improving the fattening and feeding of cattle; intensifying the development of poultry raising; and by 1960 bringing the yield of milk in the kolkhozes to not less than 1,700 kilograms and in the sovkhoses to 3,100 kilograms per cow and the average wool clip in kolkhozes to 3 kilograms and in sovkhoses to 4.2 kilograms per sheep; as well as increasing the number of cattle, sheep, etc.

Aside from the creation of a durable fodder base, the development of collectivized animal husbandry in kolkhozes and sovkhoses and an increase in labor productivity also require correct organization of animal feeding, in particular, utilization during the summer of rotation grazing for feeding and supplementary feeding of dairy stock a decisive improvement in the care of livestock and, in this connection, mechanization of farm labor providing livestock with necessary quarters; and improving the breed of the herds, i. e., carrying out the whole series of measures which zootechnology and advanced experience demand.

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In concentrating advanced technology in MTS, the Soviet state, at the same time, makes this technology available to all kolkhozes, thereby guaranteeing an over-all growth of kolkhoz production. In addition, the concentration of the basic means of production in MTS guarantees their fullest and most productive utilization, which is of vital importance to the growth of labor productivity in agriculture.

It is significant that, with an increase in MTS tractor work in the kolkhozes from 1940 to 1953 by 2.2 times, the monetary income of kolkhozes for this period increased by 2.4 times, their indivisible funds by 2.5 times, and capital investment in collectivized agriculture by 2.3 times.

At the beginning of 1954, MTS numbered more than 9,000, having more than one million tractors (in 15-horsepower units), 270,000 grain combines, about 450 tractor-driven grain sowing machines, and more than 200,000 tractor-driven mowing machines, not counting the large number of other agricultural machines. MTS during the 1954, completed about 544 million hectares of tractor work in the change-over to soft plowing, and mechanized basic field operations in kolkhozes to the extent of 82 percent. This data testifies to the fact that the continuing rapid development of all branches of kolkhoz production depends primarily on the MTS. The MTS are to complete the mechanization of crop cultivation operations and develop large-scale mechanization of labor-consuming processes in the production of potatoes and vegetables, and in animal husbandry in particular, and instill the scientific achievements and advanced practices into kolkhoz production.

The January Plenum of the CC of the CPSU once more emphasized the necessity of strengthening the role of the MTS in mechanizing kolkhoz animal husbandry, pointing out that the MTS must, in the near future, become as decisive a force in the production of animal products as it is in crop cultivation, and carry out the complete mechanization of fodder procurement operations on animal-husbandry farms as well.

Therefore, the responsibility for the development of all the branches of kolkhoz production, for the continued organizational-economic strengthening of kolkhozes and the raising of the material well-being of the kolkhoz farmer, is now charged to the MTS. This signifies a new, higher stage in the development of the MTS themselves as the strong points in the management of kolkhozes by the socialist state.

It is well known that the mechanization of basic crop cultivation operations in the kolkhozes has resulted in a large increase of labor productivity. For example, the expenditure of labor on the harvesting of one hectare of grain crops by combines at the present time amounts to 0.32 man-day instead of 14 man-days which was expended earlier on an individual peasant farm. As a result of the mechanization of basic field operations, the saving of labor for all the kolkhozes in the country in 1953 amounted to 1.9 million man-years.

The mechanization of animal husbandry is no less indicative of the growth of labor productivity. According to data of the All-Union Institute of Mechanization and Electrification of Agriculture, with complex mechanization of operation on farms only eight men are required for servicing 100-head cow barns as compared to 24 required with manual methods. At the Kolkhoz imeni Sverdlova, Sverdlovskaya Oblast, which is serviced by the Aramil'skaya MTS, complex

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mechanization of operations resulted in the average increase in milk yield of more than 100 percent from 1949 to 1953. In addition, the kolkhoz was able to economize 12,000-13,000 man-days and about 3,700 horse-days annually in the conveying and distribution of water and preparation of fodder.

Electrification of agriculture plays an especially large role in increasing labor productivity. According to data of the All-Union Agricultural Exposition, the electrification of production processes affords the following economy of manpower: in threshing and cleaning of grain, 65 percent; water supply, 90 percent; milking of cows, 83 percent; preparation of fodder, 80 percent; and clipping of sheep, 65 percent. In spite of the still small degree of electrification at kolkhozes, MTS, and sovkhoses in USSR agriculture, in 1953, about 35 million man-days were saved due to electrification.

However, the electrification of production not only results in a large economy of labor in the production of a unit of output, but also serves as one of the powerful factors in increasing production and raising its quality. For example, in 1953, in the kolkhozes serviced by the Korsun'-Shevchenkovskaya MTS, the yield in the fields worked by electric tractors was, 2.5-3 metric quintals for grain crops, and 25-30 metric quintals for sugar beets -- higher than the yield in the fields worked by engine tractors. The difference in yield is explained by the fact that electric tractor permit deep plowing (30-35 centimeters) and, by the same token, furnish the possibility of raising the agro-technological level.

Differences in the growth of labor productivity which are dependent on the level of mechanization exist not only among different branches of kolkhoz production but also within the confines of each branch. At a time when soil cultivation, sowing, and harvesting of grain crops in the kolkhozes of the basic grain rayons are almost 100 percent mechanized, the processing of grain on the threshing floors is only 20 percent mechanized, and the gathering of straw only 19 percent. Whereas for all cultivating and harvesting operations per 100 hectares of grain crops approximately 85 man-days are required, post-harvest processing of grain with the present level of mechanization requires 157 man-days, i. e., almost twice as many. Mechanization of postharvest operations would provide the opportunity of reducing labor expenditures on grain processing to 54 man-days, i. e., by almost two thirds, and, in addition, of conducting autumn field operations (removing stubble, winter sowing, and extending plowland) in the required agrotechnical period, which is one of the basic conditions for increasing the yield of agricultural crops. Such a gap in the level of mechanization of individual operations also exists in other branches of agriculture.

It is entirely understandable that such a diverse level of mechanization, i. e., the absence of complex mechanization of labor-consuming operations, retards the growth of labor productivity in the kolkhozes. In addition, the absence of mechanization in some operations unavoidably reduces the economic effectiveness of the mechanization of preceding operations, as a result of which labor productivity in many instances barely increases.

Therefore, sovkhoses, kolkhozes, and MTS have before them the task of completing the complex mechanization of field operations and carrying out the mechanization of labor-consuming operations in all other branches, especially animal husbandry. According to data compiled by Academician V. S. Nemchinov, about one third of all labor time currently expended in agriculture is expended

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on productive livestock and poultry. With the attainment of the necessary level of production of animal products, the relative share of labor expenditure in animal husbandry should increase to 50 percent. This indicates the special importance of animal-husbandry mechanization.

Without broad mechanization of all branches of agriculture, it is impossible to sustain the projected scales and rates of production growth in agriculture. In this connection, the party and government have required that socialist industry provide all branches of agriculture with the necessary machines and machine systems for the broad mechanization of operations in these branches. The significance that this can have for increasing labor productivity can be seen from the fact that, according to Academician V. S. Nemchinov, labor expenditure per hectare of spring grain sowing (taking the contemporary level of mechanization as unity) amounts to 0.49 with complex mechanization, and to 0.29 with the introduction of the newest technology, i. e., almost one fourth as much.

The January Plenum of the CC of the CPSU placed before the sovkhozes, MTS, and kolkhozes the task of attaining maximum output with the least investment of labor and resources on the basis of mechanization. The fulfillment of this requirement signifies for the MTS a reduction of state costs per unit of output received by them as payment in kind for work on the kolkhoz.

One of the most important conditions for reducing state costs in connection with agricultural products received by the MTS as payment in kind is, first of all, the fullest and most productive utilization of the machine-tractor fleet.

In strictly observing technical maintenance rules, the leading MTS not only lengthen the life of machines but achieve a high daily and seasonal machine productivity. For example, in the Reshkovskaya MTS, Moldavian SSR, the average seasonal output per 15-horsepower tractor from 1951 to 1953 amounted to about 900 hectares. Because of a reduction in operating costs, this MTS saved about 500,000 rubles during the last 3 years, providing high yields in the kolkhozes serviced by it, and reducing labor expenditure on agricultural work (calculated on a per-hectare basis) from 0.51 man-day in 1947 to 0.3 man-day in 1954, i. e., by two fifths.

As shown by the experience of leading MTS, the basic condition for lengthening the usefulness of machines and increasing the daily and seasonal rates of their productivity, besides painstaking technical maintenance, is the high quality of repair, particularly the employment of the unit method of repair and the proper and regular technical servicing of tractors and other machines during field operations, as well as the creation for these purposes of an exchange fund of prepared units and aggregates.

The assignment of machines for long periods to brigades and brigade units, and tractor drivers and operators of tractor-drawn machines, and the permanent assignment of mechanization personnel to the same kolkhozes and the same plots are of great importance. This enables them to take into account the peculiarities of each plot and achieve both the highest productivity of the tractor fleet and an economy of fuel and other resources while improving the quality of their work. It is noteworthy that, in the Reshkovskaya MTS mentioned above, a tractor driver who worked at the same kolkhoz for one year completed 395 hectares of conventional plowing, and a tractor driver who worked more than

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2 years at the same kolkhoz completed 516 hectares; the farmer achieved an economy for the season of 15 kilograms of fuel, and the latter, 207 kilograms.

The new system of planning in agriculture, which enables the MTS, in conjunction with kolkhozes, to determine the volume of tractor operations, afford opportunities to MTS workers to improve the utilization of the machine-tractor fleet and raise labor productivity.

It should be noted that the reduction of labor and resources expenditure per unit of output produced in the kolkhozes requires a decided improvement in utilization of not only MTS equipment, but also of the means of production belonging to the kolkhozes themselves.

Completion of the process of crop cultivation and mechanization of labor-consuming processes in animal husbandry create new conditions for the increasing application in kolkhoz production of the achievements of science and advanced experience, since science and technology work hand-in-hand in a socialist society. In agriculture, the bond of science and technology is manifested in the fact that advanced agrotechnology can be realized only on the basis of mechanization, while mechanization of agricultural operations can be effective only when the requirements of agrotechnology are taken into account.

Leading kolkhozes have long valued the positive role of agricultural science, striving to introduce its achievements and the advanced experience of other kolkhozes into their production. Kolkhoz "Krasnyy Oktyabr'" utilizing the scientific achievements and experience of progressive kolkhozes, not only adopted deep furrow plowing and proper crop rotations, but also switched to high-quality crops, cross-sowing of crops, and cultivation of potatoes from vernalized seeds. In this kolkhoz, in addition to the training of kolkhoz workers in special courses and the study of scientific literature, it became a rule to regularly send kolkhoz workers on missions to other kolkhozes and scientific institutions to familiarize them with advanced experience and scientific achievements. In the Kolkhoz imeni Stalin, Novy-Aleksandrovskiy Rayon, Stavropol'skiy Kray, recommended scientific and advanced practices have long been employed: deep plowing, cross and close-row methods of sowing, the checkrow method of sowing row crops, and the planting of forest shelter belts. It also engages in selective animal husbandry operations and applies other progressive methods of farming.

However, it should be noted that a number of very important agrotechnical and zootechnical methods recommended by Soviet science, which guarantee a high yield of agricultural crops and high productivity in animal husbandry, have as yet not been instilled into kolkhoz production on a large scale, and remain for the most part the property of the progressive kolkhozes. This applies particularly to the checkrow method of planting potatoes and vegetables and the sowing of maize, to hot-air heating of greenhouses, to the employment of peat and humus pots for vegetable sprouts and seedlings, and to other agrotechnical methods which guarantee not only the attainment of high yields but a great economy of labor. As late as 1954, in the Novgorodskaya Oblast, only 4% percent of the potatoes were planted by the checkrow method, and in the Estonian SSR only 16 percent. Sunflowers planted by this method in the Tambovskaya Oblast amounted to 1.1 percent; in the Voronezhskaya Oblast, 16 percent; and in the Kurskaya Oblast, 17 percent. The sowing of maize by the checkrow method in the kolkhozes amounted in the Severo-Osetinskaya ASSR to 1 percent; in the Chkalovskaya Oblast, 35 percent; and in the Dagestan ASSR, 22 percent of the area.

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The charging of MTS with agronomical and agrotechnical servicing of kolkhozes creates the premises for a broader inculcation of scientific achievements and advanced experience into kolkhoz production.

Thanks to the measures taken by the party and government, permanent groups of mechanization specialists have been assigned to the MTS, as a result of which the disparity existing in recent years between the latest technical equipment concentrated in the MTS and its utilization by seasonal and unskilled workers is being eliminated. At the same time, the number of MTS directors and chief engineers, as well as kolchoz chairmen with higher or special secondary education, has been increased. At the present time, more than 10,000 kolkhoz chairmen have higher or secondary education. A new generation of kolkhoz chairmen personnel, persons with higher or secondary education and with a great deal of party and soviet experience, are leaving the cities for the kolkhozes at the call of the party and government. For the purpose of improving the skills of MTS workers, a new system of training agricultural mechanization personnel similar to industrial trade schools, which provides for compulsory study of basic agricultural techniques by tractor drivers, combine operators, and other agricultural mechanization personnel, has been created. Production training of kolkhoz workers has also been widely developed. In 1953 and 1954, 2,358,000 kolkhoz workers attended 1 year agrotechnical courses, of whom 1,368,000 received the title of Master of Agriculture.

The full and correct utilization of MTS personnel has especially great significance in raising labor productivity. As the experience of leading MTS shows, the full utilization of these personnel makes necessary the combination of trade skills of MTS workers, which enables the tractor brigades to speed up agricultural work, and, at the same time, guarantee their workers regular earnings throughout the entire year.

The full and correct utilization of labor resources in the kolkhozes themselves has no less significance for the growth of labor productivity in the kolkhozes. V. I. Lenin pointed out that in agriculture the progress of technology and the growth of intensive farming frequently results in an increase of the quantity of labor necessary for the working of a given area. Expanding with every year the mechanization of operations, the Kolkhoz imeni "Oktyabr'skaya Revolyutsiya," Yampol'skiy Rayon, Sumskaya Oblast has, at the same time, increased the expenditure of labor from 351,000 labor days in 1951 to 431,000 labor days in 1953, attaining a large increase in agricultural crop yields, particularly hemp, as well as a growth in revenues. With the increase of labor expenditure from 224 labor days in 1950 to 398 labor days in 1953 or approximately 1.6 times on the sowing of hemp per hectare, the kolkhoz increased the yield of hemp (on land sown to vetch and oats) from 3 metric quintals to 13 metric quintals per hectare, i.e., by more than four times; there was also an increase in income per hectare from this crop, from 3,000 rubles to 53,100 rubles, i.e., by almost seven times.

The September, as well as the June Plenum of the CC of the CPSU, noted that one of the causes of the lag in kolkhoz production behind the country's requirements for agricultural products is poor labor discipline and unsatisfactory organization of labor in many kolkhozes. Therefore, the struggle for increasing labor productivity demands an all-round strengthening of labor discipline and improvement of labor organization, and the active participation of the entire able-bodied population in kolkhoz production.

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The new method of establishing the labor-day minimum, by which this minimum is determined at the general meeting of the members of a given kolkhoz depending on its production conditions and confirmed by the rayon executive committee, should play a large role in strengthening kolkhoz labor discipline.

The struggle for increasing labor productivity in kolkhozes also demands proper distribution of manpower according to branches of agriculture, particularly in increasing the number of persons engaged directly in production at the expense of administrative and service personnel. The distribution of manpower in the Kolkhoz "Krasnyy Oktyabr", Vozhgal'skiy Rayon, Kirovskaya Oblast can serve as an example of such distribution wherein, in 1954, 80.4 percent of all kolkhoz farmers were directly engaged in crop cultivation, vegetable cultivation, animal husbandry, and other branches of agriculture, and only 19.6 percent in subsidiary enterprises, construction, administrative-managerial operations, and in cultural and personal service establishments. It is not accidental that at this kolkhoz the output per labor-day in two to three times that of the average of all the kolkhozes in the Vozhgal'skiy Rayon.

As is well known, the creation of permanent production brigades in crop cultivation, animal husbandry, and other branches of kolkhoz production has played a tremendous role in the organizational and economic strengthening of kolkhozes. It has enabled the kolkhozes to eliminate personal irresponsibility in the utilization of land and other means of production, organize operations in all branches on a piecework basis, provide the necessary division and specialization of labor among the brigades and within the brigades themselves, and create the necessary conditions for the proper combination of MTS brigade and kolkhoz field brigade operations. At the present time, the role of permanent brigades is increasing, especially in connection with the broad mechanization of all branches of kolkhoz production by means of the MTS. The strengthening of permanent brigades also demands the strengthening of other units which is important to the increase of labor productivity in the cultivation of row crops and vegetables, and in other branches where labor is still insufficiently mechanized.

The broad mechanization of kolkhoz production leads to a further development of specialization and division of labor in kolkhozes, which creates new conditions for increasing its productivity and makes the normalization of labor in kolkhozes especially important. A model agricultural artel charter recommends that the kolkhozes determine, with consideration of actual working conditions, the output norms which are reasonable for conscientious kolkhoz workers, i.e., oriented toward the foremost workers in kolkhoz production.

Taking into consideration the rapid development of technology and the necessity of a continued growth of labor productivity, the leading kolkhozes, following the advice of the party and government, regularly review the existing output norms with a view of increasing them as soon as these norms fall below the level of achieved labor productivity.

The September Plenum of the CC of the CPSU emphasized that the task of the further development of all branches of agriculture must be resolved on the basis of increasing the material interest of kolkhozes and kolkhoz farmers in the results of their labor. In developing this thesis, the January Plenum indicated the necessity of working out concrete measures for increasing the material interest of kolkhoz farmers, and workers of MTS and kolkhozes in the development of collectivized animal husbandry.

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As is well known the fundamental means for increasing the personal and material interest of kolkhoz farmers in the development of collectivized kolkhoz agriculture and, consequently, the whole agricultural economy, is, above all, the proper organization of the wage system on the basis of labor days. Increased assistance by the MTS, establishment of a sound system of payments in kind to MTS, lowering of the norms of obligatory deliveries to the state, higher state purchase and procurement prices, and increased counter sales (otovarivaniye) have created conditions for enabling each kolkhoz to completely fulfill its obligations to the state, develop its collective economy, and systematically increase the rate of payments in kind and money to kolkhoz farmers for labor days worked.

For example, the Kolkhoz "Bol'shevik," Opochetskiy Rayon, Velikolukskaya Oblast, having strengthened labor discipline and raised the average output of each able-bodied worker from 150 labor days in 1953 to 323 labor days in 1954, was able to effect a number of measures to increase the flax yield. As a result, the money income of the kolkhoz increased from one million rubles to 2.4 million rubles, i.e., by 2.4 times. This enabled the kolkhoz to almost double the payment for each labor day, and, taking into account the special revenues from flax cultivation and animal husbandry, more than triple it, not counting the increase of payments in kind from other branches.

Consequently, the increase of labor productivity in the kolkhoz collective economy is the basic source of growth of the material welfare of kolkhoz farmers. It is necessary, however, that the increase of labor productivity outstrip the increase in money and products distribution for labor days worked.

While striving for a systematic increase in the rate of in-kind and money payments for labor days, the leading kolkhozes have instituted the payment of regular, quarterly and monthly advances to kolkhoz farmers during the course of the entire year, which increases the material interest of the kolkhoz farmer in the development of each branch of the collective economy to a tremendous degree.

The system of monetary advances established by the party and government, for state purchase of industrial crops, potatoes, vegetables, animal products, and grain crops in the regions where virgin and long-fallow lands are located, and also the expansion of kolkhoz trade create the possibility of paying regular monetary advances to kolkhoz farmers in the course of the entire year in all kolkhozes, and, by the same token, facilitate the continued growth of the kolkhoz farmers' labor productivity.

The resolution passed by the CC of the CPSU and the Council of Ministers USSR regarding the increase in the incentive of kolkhoz workers and MTS tractor brigade workers in expanding the production of maize also has a great deal of significance for increasing the material incentive of kolkhoz workers and MTS workers in the development of kolkhoz production.

The January Plenum of the CC of the CPSU has indicated that the most important goal before kolkhozes is the attainment of the maximum output per 100 hectares of agricultural land with the least expenditure of labor and resources per unit of output. Therefore, the struggle for increasing labor productivity in the agricultural economy demands a profound study of production costs in sovkhoses, and also the cost of the produce received by the MTS as payment in kind, as well as labor and resources expenditures of kolkhozes on the output produced by them. Meanwhile, the cost of products in sovkhoses and MTS has up to now been poorly analyzed while production costs in kolkhozes have not been studied at all under the pretense that the cost category is not applicable to kolkhoz production.

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However, an analysis of production costs is impossible without considering labor productivity. Since, in agriculture, the period of production does not coincide with the working period, and the product is received only as a result of related, though separate and independent labor processes (plowing, sowing, harvesting, etc.), it is necessary, above all, to calculate labor productivity according to these processes. In these cases, costs should be related not to the unit of output but to the unit of work fulfilled in the cultivation of a given crop (per hectare of plowing, sowing, etc.), or the care of an animal (per head). In addition, in kolkhozes it is necessary to account for expenditures of living labor both in labor days and in man-days, without which it would be impossible to organize the proper normalization of labor and, consequently, the measures for increasing labor productivity.

However, calculation of labor and resources expenditures for each separate operation cannot provide a complete picture of the actual growth of labor productivity, which requires a calculation of the output produced. Such a calculation provides the possibility of not only correctly determining output norms but of correctly comparing the final result of the work of brigades and teams, which has great significance to the organization of socialist competition and material incentives for conscientious kolkhoz farmers.

V. I. Lenin taught that in agriculture the differences in economic organization, technology, etc., are summed up in yields. Therefore, calculation of labor and resources expenditures per unit of output according to brigades and teams requires passportization (pasportizatsiya) of plots and recording of all labor and material resources expenditures for the crop concerned.

In addition to the calculation of labor productivity for brigades and teams the calculation of labor productivity for each branch of production and for the kolkhoz as a whole is also necessary; this requires calculation of the gross output (in monetary form) per worker. Without such a calculation it is impossible to determine the actual development of the separate branches and the kolkhoz as a whole and, consequently, to properly determine the goals in the field of labor productivity.

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